WHAT IS CLAIMED IS:

1.   An image processing method comprising:

setting a common coordinate system which can be transformed from individual coordinate systems of a

5   plurality of image sensing devices;

estimating postures of at least one of the plurality of image sensing devices;

calculating an estimated posture of the common coordinate system using at least one of the estimated

10   posture of the plurality of image sensing devices;

calculating a correction transform for reducing a shakiness of the common coordinate system using the estimated posture of the common coordinate system;

calculating a correction transform for reducing a

15   shakiness of each of the plurality of image sensing devices using the correction transform;

applying the corresponding correction transform to a sensed image which is sensed by each of the plurality of image sensing devices; and

20   composing a panoramic image by joining a plurality of transformed sensed images.

2.   An image processing method comprising:

setting a common coordinate system which can be transformed from individual coordinate systems of a

25   plurality of image sensing devices;

estimating postures of at least one of the plurality of image sensing devices;

calculating an estimated posture of the common coordinate system using at least one of the estimated posture of the plurality of image sensing devices;

calculating a correction transform for reducing a
5   shakiness of the common coordinate system using the estimated posture of the common coordinate system;

composing a panoramic image by joining a plurality of sensed images, which are sensed by the plurality of image sensing devices; and

10   applying the correction transform for reducing a shakiness of the common coordinate system to the panoramic image.

3.   The method according to claim 1 or 2, wherein the correction transform for reducing a shakiness of each
15   of the common coordinate system or the plurality of image sensing devices is a transform for correcting roll and pitch angles.

4.   The method according to claim 1 or 2, wherein the correction transform for reducing a shakiness of each
20   of the common coordinate system or the plurality of image sensing devices is a transform for correcting yaw, roll and pitch angles.

5.   The method according to claim 1 or 2, wherein positions of the plurality of image sensing devices and
25   common coordinate systems are also estimated upon estimating the postures.

6.   The method according to claim 5, wherein the
correction transform for reducing a shakiness of each
of the common coordinate system and the plurality of
image sensing devices is a transform for correcting yaw,
5   roll, and pitch angles, and the position.

7.   An image processing apparatus comprising:
setting unit adapted to set a common coordinate
system which can be transformed from individual
coordinate systems of a plurality of image sensing
10 devices;
estimation unit adapted to estimate postures of
at least one of the plurality of image sensing devices;
first calculation unit adapted to calculate an
estimated posture of the common coordinate system using
15 at least one of the estimated posture of the plurality
of image sensing devices;
second calculation unit adapted to calculate a
correction transform for reducing a shakiness of the
common coordinate system using the estimated posture of
20 the common coordinate system;
third calculation unit adapted to calculate a
correction transform for reducing a shakiness of each
of the plurality of image sensing devices using the
correction transform;
25   application unit adapted to apply the
corresponding correction transform to a sensed image

which is sensed by each of the plurality of image

sensing devices; and

composition unit adapted to compose a panoramic

image by joining a plurality of transformed sensed

5   images.

8.   An image processing apparatus comprising:

setting unit adapted to set a common coordinate

system which can be transformed from individual

coordinate systems of a plurality of image sensing

10   devices;

estimation unit adapted to estimate postures of

at least one of the plurality of image sensing devices;

first calculation unit adapted to calculate an

estimated posture of the common coordinate system using

15   at least one of the estimated posture of the plurality

of image sensing devices;

second calculation unit adapted to calculate a

correction transform for reducing a shakiness of the

common coordinate system using the estimated posture of

20   the common coordinate system;

composition unit adapted to compose a panoramic

image by joining a plurality of sensed images, which

are sensed by the plurality of image sensing devices;

and

25   application unit adapted to apply the correction

transform for reducing a shakiness of the common

coordinate system to the panoramic image.

9.   A computer program for making a computer function as an image processing apparatus of claim 7.

10.   A computer program for making a computer function as an image processing apparatus of claim 8.

5   11.   A computer readable storage medium storing a computer program of claim 9.

12.   A computer readable storage medium storing a computer program of claim 10.

13.   An imaging apparatus comprising:

10   a plurality of image sensing devices;

a processor for composing a stabilized panoramic image; and

a display device for displaying the panoramic image,

15   wherein said processor composes the panoramic image by performing the steps of:

setting a common coordinate system which can be transformed from individual coordinate systems of a plurality of image sensing devices;

20   estimating postures of at least one of the plurality of image sensing devices;

calculating an estimated posture of the common coordinate system using at least one of the estimated posture of the plurality of image sensing devices;

25   calculating a correction transform for reducing a shakiness of the common coordinate system using the estimated posture of the common coordinate system;

calculating a correction transform for reducing a

shakiness of each of the plurality of image sensing

devices using the correction transform;

applying the corresponding correction transform

5   to a sensed image which is sensed by each of the

plurality of image sensing devices; and

composing the stabilized panoramic image by

joining a plurality of transformed sensed images.

14.   An imaging apparatus comprising:

10   a plurality of image sensing devices;

a processor for composing a stabilized panoramic

image; and

a display device for displaying the panoramic

image,

15   wherein said processor composes the panoramic

image by performing the steps of:

setting a common coordinate system which can be

transformed from individual coordinate systems of the

plurality of image sensing devices;

20   estimating postures of at least one of the

plurality of image sensing devices;

calculating an estimated posture of the common

coordinate system using at least one of the estimated

posture of the plurality of image sensing devices;

25   calculating a correction transform for reducing a

shakiness of the common coordinate system using the

estimated posture of the common coordinate system;

composing a panoramic image by joining a
plurality of sensed images, which are sensed by the
plurality of image sensing devices; and

applying the correction transform for reducing a
5   shakiness of the common coordinate system to the
panoramic image in order to compose the stabilized
image.